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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,408	09/25/2001	Robert Moerman	30394-1049	9235

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PEACOCK MYERS, P.C.
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ALBUQUERQUE, NM 87125-6927

EXAMINER

LUDLOW, JAN M

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,408

Applicant(s)

MOERMAN ET AL

Examiner

Jan M. Ludlow

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/28/2005, 5/13/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 28, 2005 has been entered.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-8, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon et al (2003/0092195).

Moon teaches a method of electrospray transfer from a capillary in the claimed size range at a flow rate in the claimed range and with spacing between the tip and the target in the claimed range [0036]- [0040]. Moon additionally teaches that the electrospray method can be used to deposit material from one microplate to another, for, e.g., proteomic screening ([0144] – [0146] and Figs. 23A-B). Specifically, Moon teaches:

[0036] Because the electrospray device is manufactured using reactive-ion etching and other standard semiconductor processing techniques, the dimensions of such a device can be very small, for example, as small as 2 **.mu.m inner diameter** ...

[0040] The electrospray device of the present invention may be placed **1-2 mm** or up to 10 mm from the orifice of an API mass spectrometer to establish a stable nanoelectrospray at flow rates as low as **20 nL/min** with a voltage of, for example, 700 V applied to the nozzle and 0-350 V applied to the substrate and/or the planar ejection surface of the silicon microchip.

Note that 2 um inner diameter is less than 150 um as claimed, 1mm spacing is less than 2mm as claimed and 20nl/min (= .33 nl/s) is between 0.01 pl/s and 1ml/s as claimed.

Moon fails to explicitly teach the nozzle size, flow rate and spacing in the electrospray deposition embodiment.

It would have been obvious to perform the electrospray deposition using the parameters taught for electrospray transfer in order to carry out the invention substantially as taught.

6. Claims 9-13, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon as applied to claims above, and further in view of Morozov (6,350,609).

7. Moon fails to teach the electrode placement, substrate characteristics or vapor treatment.

8. Morozov teaches a method similar to that of Moon. The substrate carries the counter electrode (Figs. 4A-C) and raised lands 64 of specified properties are used to bind transferred molecules. Wet deposition (Fig. 1B) and processing under vapor are taught. Note that this reference corresponds to WO 98/58745 cited in the International Search Report.

9. It would have been obvious to use the techniques of Morozov in the method of Moon in order to control and enhance deposition as taught.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Pui et al (6093557) corresponding to WO98/56894 cited in the International Search Report does not teach or suggest the instant invention because a spacing of 5mm – 3cm is taught (col. 16, line 10).

12. Mann et al teaches a capillary in the claimed size range operating at a flow rate as claimed spaced 1.5 mm from the counter electrode (col. 4).

13. Ramsey and Karger additionally teach electrospray transfer from a microfluidic device to a substrate.

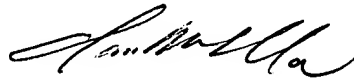
14. The declaration filed on March 28, 2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the Moon reference.

The evidentiary showing is not commensurate in scope with the claims. The showing supports a 60 μm inner diameter (as compared to less than 150 μm in claim 1), a flow rate of 50 $\mu\text{l/s}$ or less or lower than 100 $\mu\text{l/s}$ (as compared to between 0.01 $\mu\text{l/s}$ and 1 ml/s in claim 1) and a surface to orifice spacing of 250-500 μm (compared to less than 2 mm in claim 1, or 200-1000 μm as in claim 6). The substrate is not disclosed as being used in an assay as recited in claim 2. With the exception of an enzyme, the materials of claim 3 are not described. With respect to claims 7, 9-10, the broader scope of claim 7 and specific embodiments of claims 9-10 are not shown. The limitations of claims 11-19 are not described. The flow rate variation of claims 5 and 20 is not described.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow
Primary Examiner
Art Unit 1743

Jml
July 25, 2005